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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : PROSIDING ILMIAH

Judul Karya Ilmiah/Artikel : The application of microencapsulated phycocyanin as a blue natural colorant to the quality of jelly candy

Jumlah Penulis : 3 (tiga)

Status Pengusul : Penulis pertama/ ~~penulis ke-2~~/ penulis korespondensi **

Penulis Karya Ilmiah : Eko Nurcahya Dewi, Retno Ayu Kurniasih, Lukita Purnamayati

Identitas Karya Ilmiah : a. Nama Prosiding : IOP Conf. Series :
Earth and Environmental Science.

b. No. ISBN : -

c. Tahun Terbit, : 2018

Tempat Pelaksanaan : Indonesia

d. Penerbit : IOP

e. Alamat web prosiding :
<http://iopscience.iop.org/article/10.1088/1755-1315/116/1/012047>

Alamat web artikel :
<http://iopscience.iop.org/article/10.1088/1755-1315/116/1/012047/pdf>

g. Terindeks di (jika ada) : Scopus

Kategori Publikasi Jurnal Ilmiah : ☒ Prosiding Forum Ilmiah Internasional
(beri ✓ pada kategori yang tepat) ☐ Prosiding Forum Ilmiah Nasional.....

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional <div>30</div>	Nasional <div>10</div>	
a. Kelengkapan unsur isi paper (10%)	3		3
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		5.4
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	9		8.7
d. Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	9		18
Total = (100%)	30		25.1
Nilai Pengusul =	60% =		15.06

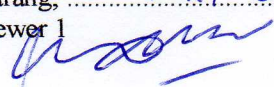
Catatan Penilaian Paper oleh Reviewer : Penelitian layan sesuai komposisi pengusul. Turnitin 2%. Aplikasi pewarna biru makanan bentuk mikro kapsul berbagai permen jelly. Alat & analisis menggunakan mikroskop. Sumber data DIKTI 2017.

$$\Sigma \text{mutakhir} = 23$$
$$\text{mutakhir} = \frac{22}{23} = 95.7$$

(>2007)

$$= \frac{29}{30} \times 9 = 8.7$$

$$\text{Dislusi} = \frac{10}{23} = 43.5$$
$$= \frac{18}{30} \times 9 = 5.4$$

Semarang, 22/11/2018.
Reviewer 1

Prof. Norma Afiati, M.Sc., Ph.D
NIP. 195511101982032001
Unit kerja : FPIK UNDIP

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Identitas Karya Ilmiah : a. Nama Prosiding : IOP Conf. Series :
Earth and Environmental Science.
b. No. ISBN : -
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Tempat Pelaksanaan : Indonesia
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Kategori Publikasi Jurnal Ilmiah : ☒ Prosiding Forum Ilmiah Internasional
(beri ✓ pada kategori yang tepat) ☐ Prosiding Forum Ilmiah Nasional.....
Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional 30	Nasional 10	
a. Kelengkapan unsur isi paper (10%)	3		3.0
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		6.6
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	9		9.0
d. Kelengkapan unsur dan kualitas terbitan/prosiding (30%)	9		8.8
Total = (100%)	30		27.4
Nilai Pengusul =			16.44

Catatan Penilaian Paper oleh Reviewer :

- Sesuai dengan bidang keilmuan - prosiding int terindeks
- materi publikasi cukup baik dan aplikatif
- Kualitas Terbitan bagus, isi paper lengkap
- Kedalaman pembahasan = $40/23 = 43.5\% = \frac{22}{30} \times 9 = 6.6$
- Kemutakhiran informasi = $22/23 = 95.6\% = \frac{30}{30} \times 9 = 9$
- Similarity 0%, no student paper.

Semarang, 24 N N 2018
Reviewer 2



Prof. Dr. Ir. Slamet Budi Prayitno, M.Sc
NIP. 195506281981031005
Unit kerja : FPIK Undip

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IOP Conference Series: Earth and Environmental Science
Volume 116, Issue 1, 8 March 2018, Article number 012047
3rd International Conference on Tropical and Coastal Region Eco Development 2017; Yogyakarta;
Indonesia; 2 October 2017 through 4 October 2017; Code 135131

The Application of Microencapsulated Phycocyanin as a Blue Natural Colorant to the Quality of Jelly Candy (Conference Paper) [\(Open Access\)](#)

Dewi, E.N. ✉, Kurniasih, R.A., Purnamayati, L. 👤

Faculty of Fisheries and Marine Science, Diponegoro University, Jl. Prof. Soedarto, SH, Semarang, 50275, Indonesia

Abstract

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Phycocyanin is a blue color pigment which can be extracted from *Spirulina* sp. makes it potential to use as an alternative natural dye in the food product. The aim of this research was to determine the application of microencapsulated phycocyanin processed using spray dried method to the jelly candy. As a natural blue colorant, phycocyanin was expected to be safe for the consumer. The jelly candy was evaluated on the characteristics of its moisture, ash, Aw, pH, color appearance, and phycocyanin spectra with FTIR. The phycocyanin was microencapsulated using maltodextrin and Na-Alginate as the coating materials (maltodextrin and Na-Alginate in ratio 9:1.0 w/w). The spray drying process was operated with an inlet temperature of 80°C. The various concentrations of microencapsulated phycocyanin were added to the jelly candy such as 0%, 1%, 3%, 5% and jelly candy with brilliant blue used as comparison, each called PC, PS, PT, PL, and PB. The results showed that the various concentrations of phycocyanin added on the jelly product had significantly different on moisture content, Aw, and blue color. The FTIR spectra indicated that phycocyanin still persisted on the jelly candy. PL was the best jelly candy with the bluest color under PB. © Published under licence by IOP Publishing Ltd.

SciVal Topic Prominence ⓘ

Topic: Spirulina | Phycocyanin | biomass production

Prominence percentile: 97.036 ⓘ

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Author keywords

blue colorant Jelly candy Microencapsulated Natural dye Phycocyanin

Indexed keywords

Engineering controlled terms: Coastal zones Color Flavors Fourier transform infrared spectroscopy Moisture Polysaccharides Sodium Spray drying Vat dyes

Engineering uncontrolled terms: blue colorant Jelly candy Microencapsulated Natural dye Phycocyanin

Engineering main heading: Microencapsulation

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Physical characteristics of phycocyanin from spirulina microcapsules using different coating materials with freeze drying method

Dewi, E.N. , Purnamayati, L. , Kurniasih, R.A. (2017) *IOP Conference Series: Earth and Environmental Science*

Production of a minimally processed jelly candy for children using honey instead of sugar

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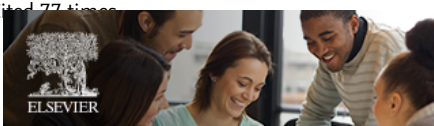
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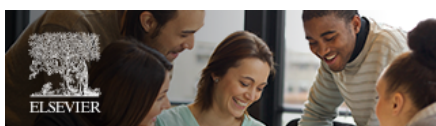
- ☐ 1 Habilla, C., Sim, S.Y., Aziah, N., Cheng, L.H.
The properties of jelly candy made of acid-thinned starch supplemented with konjac glucomannan or psyllium husk powder
(2011) *International Food Research Journal*, 18 (1), pp. 213-220. Cited 4 times.
[http://www.ifrj.upm.edu.my/18%20\(01\)%202011/\(21\)_IFRJ-2010-010_Cheng_USM\[1\].pdf](http://www.ifrj.upm.edu.my/18%20(01)%202011/(21)_IFRJ-2010-010_Cheng_USM[1].pdf)
- ☐ 2 Zahra, N., Alim-Un-Nisa, Kalim, I., Fatima, S., Khan, H., Akhlaq, F., Butt, I.F., (...), Hina, S.
Identification of synthetic food dyes in various candies
(2016) *Park. J. Biochem. Mol. Biol.*, 49, pp. 09-17.
- ☐ 3 Saleem, N., Umar, Z.N., Khan, S.I.
Survey on the use of synthetic food colors in food samples procured from different educational institutes of Karachi city
(2013) *The Journal of Tropical Life Science*, 3 (1), pp. 1-7. Cited 8 times.
- ☐ 4 Allam, K.V., Kumar, G.P.
Colorants - the cosmetics for the pharmaceutical dosage forms
(2011) *International Journal of Pharmacy and Pharmaceutical Sciences*, 3 (SUPPL. 3), pp. 13-21. Cited 21 times.
<http://www.ijppsjournal.com/Vol3Suppl3/2152.pdf>
- ☐ 5 Moraes, C.C., Sala, L., Cerveira, G.P., Kalil, S.J.
C-Phycocyanin extraction from *Spirulina platensis* wet biomass ([Open Access](#))
(2011) *Brazilian Journal of Chemical Engineering*, 28 (1), pp. 45-49. Cited 47 times.
<http://www.scielo.br/pdf/bjce/v28n1/a06v28n1.pdf>
doi: 10.1590/S0104-66322011000100006
[View at Publisher](#)
- ☐ 6 Jerley, A.A., Prabu, D.M.
Purification, characterization and antioxidant properties of C-Phycocyanin from *Spirulina platensis*
(2015) *SIRJ-APBBP*, 2, pp. 7-15.
- ☐ 7 Chaiklahan, R., Chirasuwan, N., Bunnag, B.
Stability of phycocyanin extracted from *Spirulina* sp.: Influence of temperature, pH and preservatives
(2012) *Process Biochemistry*, 47 (4), pp. 659-664. Cited 77 times.
doi: 10.1016/j.procbio.2012.01.010
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- 8 Chanana, A., Kataria, M.K., Sharma, M., Bilandi, A.
Microencapsulation: Advancements in applications
(2013) *International Research Journal of Pharmacy*, 4, pp. 1-5. Cited 3 times.
-
- 9 Chaiklahan, R., Chirasuwan, N., Loha, V., Tia, S., Bunnag, B.
Separation and purification of phycocyanin from *Spirulina* sp. using a membrane process
(2011) *Bioresource Technology*, 102 (14), pp. 7159-7164. Cited 63 times.
doi: 10.1016/j.biortech.2011.04.067
[View at Publisher](#)
-
- 10 Dewi, E.N., Purnamayati, L., Kurniasih, R.A.
Antioxidant activities of phycocyanin microcapsules using maltodextrin and carrageenan as coating materials
(2016) *Jurnal Teknologi*, 78 (4-2), pp. 45-50. Cited 5 times.
<http://www.jurnalteknologi.utm.my/index.php/jurnalteknologi/article/download/8151/4924>
-
- 11 Buntaran, W., Astirin, O.P., Mahajoeno, E.
Effect of various sugar solution concentration on characteristics of dried candy tomato (*Lycopersicum esculentum*)
(2010) *Bioscience*, 2, pp. 55-61. Cited 2 times.
-
- 12 Dewi, E.N., Purnamayati, L., Kurniasih, R.A.
Physical characteristics of phycocyanin from spirulina microcapsules using different coating materials with freeze drying method ([Open Access](#))
(2017) *IOP Conference Series: Earth and Environmental Science*, 55 (1), art. no. 012060. Cited 3 times.
<http://www.iop.org/EJ/volume/1755-1315>
doi: 10.1088/1755-1315/55/1/012060
[View at Publisher](#)
-
- 13 Venkatesan, S., Pugazhendy, K., Sangeetha, D., Vasantharaja, C., Prabakaran, S., Meenambal, M.
Fourier Transform Infrared (FT-IR) Spectroscopic analysis of *Spirulina*
(2012) *International Journal of Pharmaceutical & Biological Archives*, 3, pp. 969-972. Cited 6 times.
-
- 14 Delgado, P., Bañón, S.
Determining the minimum drying time of gummy confections based on their mechanical properties ([Open Access](#))
(2015) *CYTA - Journal of Food*, 13 (3), pp. 329-335. Cited 5 times.
<http://www.tandfonline.com/toc/tcyt20/current>
doi: 10.1080/19476337.2014.974676
[View at Publisher](#)
-
- 15 Ergun, R., Lietha, R., Hartel, R.W.
Moisture and shelf life in sugar confections
(2010) *Critical Reviews in Food Science and Nutrition*, 50 (2), pp. 162-192. Cited 52 times.
doi: 10.1080/10408390802248833
[View at Publisher](#)
-



□ 16 Muzzaffar, S., Baba, W.N., Nazir, N., Masoodi, F.A., Bhat, M., Bazaz, R.
Effect of storage on physicochemical, microbial and antioxidant properties of pumpkin (*Cucurbita moschata*) candy
(2016) *Cogent Food and Agriculture*, 2 (1), pp. 1-13. Cited 3 times.

□ 17 Utomo, B.S.B., Darmawan, M., Hakim, A.R., Ardi, D.T.
Physicochemical properties and sensory evaluation of jelly candy made from different ratio of κ-carrageenan and konjac
(2014) *Squalene Bulletin of Marine & Fisheries Postharvest & Technology*, 9 (1), pp. 25-34. Cited 2 times.

□ 18 Charoen, R., Savedboworn, W., Phuditcharnchnakun, S., Khuntaweetap, T.
Development of antioxidant gummy jelly candy supplemented with *Psidium guajava* leaf extract
(2015) *KMUTNB Int'l J Appl Sci Technol.*, 8, pp. 145-151. Cited 2 times.

□ 19 Pereira, L., Gheda, S.F., Ribeiro-Claro, P.J.A.
Analysis by vibrational spectroscopy of seaweed polysaccharides with potential use in food, pharmaceutical, and cosmetic industries
(2013) *International Journal of Carbohydrate Chemistry*, pp. 1-7. Cited 58 times.

□ 20 Dewi, E.N., Darmanto, Y.S., Ambariyanto
Characterization and quality of semi-refined carrageenan (SCR) products from different coastal waters based on fourier transform infrared technique
(2012) *Journal of Coastal Development*, 16, pp. 25-31. Cited 15 times.

□ 21 Adina, C., Florinela, F., Abdelmoumen, T., Carmen, S.
Application of FTIR spectroscopy for a rapid determination of some hydrolytic enzymes activity on sea buckthorn substrate
(2010) *Romanian Biotechnological Letters*, 15 (6), pp. 5738-5744. Cited 31 times.
<http://ebooks.unibuc.ro/biologie/RBL/rbl6vol15/9%20Chis%20Adina.pdf>

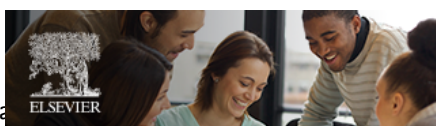
□ 22 Gang, Y., Zheng, L., Fei, L., Chen, L., Fu-Xin, D., Nai-Ju, Y.
Isolation and characterization of C-phycoerythrin from *Spirulina platensis*
(1999) *Chemical Research in Chinese Universities*, 15, pp. 35-38. Cited 3 times.

□ 23 Suzery, M., Hadiyanto, Majid, D., Setyawan, D., Sutanto, H.
Improvement of Stability and Antioxidant Activities by Using Phycocyanin - Chitosan Encapsulation Technique ([Open Access](#))
(2017) *IOP Conference Series: Earth and Environmental Science*, 55 (1), art. no. 012052. Cited 2 times.
<http://www.iop.org/EJ/volume/1755-1315>
doi: 10.1088/1755-1315/55/1/012052

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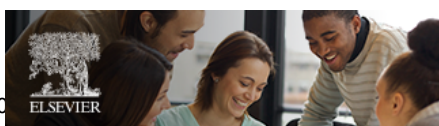


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